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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,922	07/31/2000	Manfred Hahl	4648 US	5000

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EXAMINER

NGUYEN, JENNIFER T

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/628,922

Applicant(s)

HAHL, MANFRED

Examiner

Jennifer T Nguyen

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the bonding wire (15) must be shown on the feature(s) or canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asakawa et al. (U.S. Patent No. 5,892,589) in view of Stahl (U.S. Patent No. 5,557,353).

Regarding claim 1, referring to figures 2 and 41, Asakawa teaches a color head-up display, in particular for vehicles, in which the light from a light source (192) (figure 41, col. 25, lines 34-60) is transmitted through an at least partially light transmitting display (145) and is projectable onto a windshield (col. 11, lines 31-42, col. 3 and lines 18-48).

Asakawa differs from claim 1 in that he does not specifically disclose a multiplicity of red, blue and green light emitting diodes are arranged without packaging on a common support and a heat-dissipating device for cooling the light-emitting diodes is present.

However, Stahl teaches the light source comprise of a plurality of light emitting diodes and said plurality of light emitting diodes include red, green and blue diodes (col. 9, lines 16-19) and a heat-dissipating device for cooling the light-emitting diodes (figure 1, col. 4, lines 33-34). Although Stahl does not specifically disclose said light emitting diodes are arranged without packaging on a common support but it would have been obvious to obtain the arrangement of light emitting diodes without packaging on a common support in order to allow the individual light emitting diodes arranged close together to achieve a high luminance.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate multiplicity of red, blue and green light emitting diodes are arranged without packaging on a common support and a heat-dissipating device for cooling the light-emitting diodes as taught by Stahl in the system of Asakawa in order to arrange the individual light emitting diodes very close together to achieve a high luminance so that an optimum optical representation is obtained even under bright daylight conditions and heat-dissipating device to protect the light source from the heat.

Regarding claims 2, 3, and 5, the combination system of Asakawa and Stahl differs from claims 2, 3, and 5 in that it does not disclose a multiplicity of light emitting diodes is arranged in the form of a compact array in that the compact array is configured in the form of a matrix and the said compact array has a largely round form. However, it would have been obvious to obtain a multiplicity of light emitting diodes is arranged in the form of a compact array in that the compact array is configured in the form of a matrix in order to provide a simple manner in the bonding of the individual diodes and obtain the most utilized luminous intensity of the light

Art Unit: 2674

emitting diodes when the light is transmitted through a lens optical arrangement, by this way, the material and energy are saved.

Regarding claim 4, it would have been obvious to obtain the number of light emitting diodes of one color is adapted to the spectral sensitivity of the eye and to the spectral efficiency of the diodes in order to avoid the harmfulness of eyes for observers.

Regarding claims 6 and 7 it would have been obvious to obtain the individual light emitting diodes are chip pads fitted on a metallic support material array and in each case at least one bonding wire is connected to said chip pad and to the support material array in order to simplify the circuitry, reduce the size, weight and cost.

Regarding claims 8 and 9, it would have been obvious to obtain a plurality of said light emitting diodes are connected in series and a plurality of light-emitting diodes of one color are connected in series in order to eliminate the external connections.

Regarding claim 10, the combination system of Asakawa and Stahl teaches the color head-up display wherein the at least partially light-transmitting display a liquid crystal display (col. 9, lines 30-40 of Asakawa)

Regarding claim 11, the combination system of Asakawa and Stahl teaches the color head-up display wherein said display is a color liquid crystal display (col. 13, lines 10-15 of Asakawa) and wherein the light source simultaneously emits red, green and blue light (col. 9, lines 16-19 of Stahl).

Regarding claim 12, The combination system of Asakawa and Stahl teaches the liquid crystal display is a monochrome liquid crystal display and wherein the individual color of the

Art Unit: 2674

light emitting diodes can be successively switched on and off in a rapid sequence (figures 22 and 23 of Asakawa, col. 15, lines 2-6).

Regarding claim 13, the combination system of Asakawa and Stahl teaches the color head-up display wherein a condenser lens (16) is arranged between the light source and the display (figure 1, col. 4, lines 33-37 of Stahl).

Regarding claim 14, the combination system of Asakawa and Stahl teaches the color head-up display wherein light from the light emitting diode is reflected by one or a plurality of mirrors and is transmitted through the display (col. 11, lines 31-41 of Asakawa).

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asakawa et al. (U.S. Patent No. 5,892,589) in view of Stahl (U.S. Patent No. 5,557,353) and further in view of Erskine et al. (U.S. Patent No. 5,805,119).

Regarding claim 15, the combination system of Asakawa and Stahl differs from claim 15 in that it does not disclose a plurality of light sources. However, Erskine teaches a head up display wherein there is a plurality of light source (174, 176) (figure 14, col. 7, lines 12-13 and 22-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the plurality of light sources as taught by Erskine in the combination system of Asakawa and Stahl in order to obtain a better utilization of light from light emitting diodes.

5. The prior art made of record and not relied upon is considered to pertinent applicant's disclosure.

Koide et al. (U.S. Patent No. 6,100,943) teach vehicular display device for directly and indirectly displaying information.

Art Unit: 2674

Brown (U.S. Patent No. 6,111,701) teaches chromatic aberration corrected multi-color head up display system.

Gohman et al. (U.S. Patent No. 5,710,668) teaches multi-color head-up display system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225**. The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reach at **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to: 703-872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

Jennifer T. Nguyen

Patent Examiner

Art Unit 2674


RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600